

# Control Laboratories

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Account No:  
 10819  
 Batch:  
 JUN 24 A  
 CODE:  
 BioChar IBI

Pat Sherren  
 Metzler Forest Products (Warriors Mark)  
 1588 Ridge Road  
 Warriors Mark, PA 16877

\* Particle distribution  
 is approximate for  
 unscreened material

Date Received: 5/30/2024  
 Sample ID: Metzler pureCHAR dust 2024-05-28  
 Lab ID. Number: 4050732-01

### International BioChar Initiative (IBI) Laboratory Tests for Certification Program

	Dry Basis Unless Stated: Range	Units	Method
Moisture (time of analysis)	13.8	% wet wt.	ASTM D1762-84 (105c)
Bulk Density	12.5	lb/cu ft	
Organic Carbon	90.1	% of total dry mass	Dry Combust-ASTM D 4373
Hydrogen/Carbon (H:C)	0.15 0.7 Max	Molar Ratio	H dry combustion/C(above)
Total Ash	3.4	% of total dry mass	ASTM D-1762-84
Total Nitrogen	0.77	% of total dry mass	Dry Combustion
pH value	10.00	units	4.11USCC:dil. Rajkovich
Electrical Conductivity (EC20 w/w)	0.690	dS/m	4.10USCC:dil. Rajkovich
Liming (neut. Value as-CaCO3)	8.7	%CaCO3	AOAC 955.01
Carbonates (as-CaCO3)	4.6	%CaCO3	ASTM D 4373
Butane Act.	10.3	g/100g dry	ASTM D 5742-95
Surface Area Correlation	462	m2/g dry	G

All units mg/kg dry unless stated:		Range of		Reporting		Particle Size Distribution *		
	Results	Max. Levels	Limit (ppm)	Method	Results	Units	Method	
Arsenic (As)	ND	13 to 100	0.46	J	< 0.5mm	33.7 percent	F	
Cadmium (Cd)	ND	1.4 to 39	0.19	J	0.5-1mm	23.1 percent	F	
Chromium (Cr)	7.9	93 to 1200	0.46	J	1-2mm	24.8 percent	F	
Cobalt (Co)	ND	34 to 100	0.46	J	2-4mm	16.9 percent	F	
Copper (Cu)	3.5	143 to 6000	0.46	J	4-8mm	1.5 percent	F	
Lead (Pb)	ND	121 to 300	0.19	J	8-16mm	0.0 percent	F	
Molybdenum (Mo)	0.65	5 to 75	0.46	J	16-25mm	0.0 percent	F	
Mercury (Hg)	ND	1 to 17	0.001	EPA 7471	25-50mm	0.0 percent	F	
Nickel (Ni)	4.2	47 to 420	0.46	J	>50mm	0.0 percent	F	
Selenium (Se)	ND	2 to 200	0.93	J	Basic Soil Enhancement Properties			
Zinc (Zn)	2.4	416 to 7400	0.93	J	Total (Ca)	10806 mg/kg	E	
Boron (B)	23.2	Declaration	4.6	TMECC	Total (Mg)	464 mg/kg	E	
Chlorine (Cl)	30.7	Declaration	20.0	TMECC	Total (K)	6894 mg/kg	E	
Sodium (Na)	ND	Declaration	463	E	Total (P)	365 mg/kg	E	
Iron (Fe)	136	Declaration	23.1	E	Ammonia (NH4-N)	2.9 mg/kg	A	
Manganese (Mn)	1114	Declaration	0.46	J	Nitrate (NO3-N)	1.9 mg/kg	A	
					Organic (Org-N)	7655 mg/kg	Calc.	
					Volatile Matter	31.2 percent dw	D	

\* "ND" stands for "not detected" which means the result is below the reporting limit.

Method A Rayment & Higginson  
 D ASTM D1762-84  
 E EPA3050B/EPA 6010  
 F ASTM D 2862 Granular

G Butane Activity Surface Area Correlation Based on McLaughlin, Shields, Jagiello, & Thiele's 2012 paper: Analytical Options for Biochar Adsorption and Surface Area  
 J EPA3050B/EPA 6020

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